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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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MAR 17 2015

OFFICE OF ENVIRONMENTALCLEANUP

SUBJECT: Amendment to the Action Memorandum for the Removal Action at the Jorgensen Forge Outfall Site, Lower Duwamish Waterway Superfund Site, Seattle, King County, Washington

FROM: Ravi Sanga, Remedial Project Manager
Superfund Site Cleanup Unit #3

THRU: Shawn Blocker, Unit Manager
Superfund Site Cleanup Unit #3

TO: Chris D. Field, Program Manager
Emergency Management Program

I. PURPOSE

The purpose of this Amendment to the Action Memorandum is to request a change in the scope of response for the time-critical removal action at the Jorgensen Forge Outfall Early Action Area, Lower Duwamish Waterway Superfund Site ("LDW"), Seattle, King County, Washington ("Site"). The proposed removal action documented in this Amendment is expected to be performed by The Boeing Corporation ("Boeing") and the Jorgensen Forge Corporation ("Jorgensen Forge"), potentially responsible parties ("PRPs"), in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), with oversight provided by the U.S. Environmental Protection Agency ("EPA").

II. SITE CONDITIONS AND BACKGROUND

The Site description and background have not changed from the descriptions provided in the Action Memorandum, except for the following (condition below) that has led to the proposed change in the scope of the response.

The initial time-critical removal action was performed by the PRPs in 2010. This action consisted of the *in situ* cleaning and closure of 15- and 25-inch public lateral sewage discharge property line storm drain ("PLSD") pipes to prevent polychlorinated biphenyls ("PCBs") and other hazardous substances from continuing to enter the LDW. The two PLSD pipes were constructed of concrete with the exception of approximately the last 100 feet at the west end of the pipes, which was constructed of corrugated metal pipe ("CMP"). The 2010 action did not include removal of the CMP because at the time the information showed that *in situ* cleaning and closure of the PLSD pipes provided sufficient control of sources of PCBs and other hazardous substances to the LDW. However, soil investigations, conducted subsequent to the 2010 removal action, shows there are high concentrations of PCBs in soil in the vicinity of the CMP that pose an on-Site risk as well as a risk of contamination to the LDW sediments. In order to effectively provide access to, and excavation of, the PCB-contaminated soil, the CMP must be removed.

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Data from the 2010 sampling and analysis of materials at the Site, as well as results from the 2014 angle boring collection for the Site, indicate that soils at the Site are contaminated with PCBs above the levels allowed by the Model Toxics Control Act ("MTCA") and the Toxic Substances Control Act ("TSCA") and require removal. PCBs in soil range from non-detect to 150 ppm. The proposed removal action will excavate and dispose of the CMP portions of the PLSD pipes, and the soils in the vicinity of the CMP with a concentration of PCBs greater than or equal to one part per million ("ppm") .

III. THREATS TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The threats to public health or welfare or the environment, and statutory and regulatory authorities have not changed from the descriptions provided in the Action Memorandum.

IV. ENDANGERMENT DETERMINATION

The endangerment determination has not changed from the description provided in the Action Memorandum.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The proposed removal action will excavate and properly dispose of the CMP portions of the PLSD pipes, and soils in the vicinity of the CMP with a concentration of PCBs greater than or equal to 1 ppm, thus eliminating the CMP and soil as an on-Site risk as well as a continuing source of contamination to the LDW. Due to the immediate proximity of the Site to the LDW, which presents the associated risk of contaminant migration from the Site to the LDW via groundwater or infiltration by surface water, and the potential for future non-industrial use of the Site, the cleanup level of 1 ppm being required by EPA is consistent with the requirements of CERCLA, TSCA and MTCA. The proposed removal action is necessary to protect public health, welfare and the environment from a release and substantial threat of release of PCBs.

The CMP and associated contaminated soils area is comprised of the northwestern corner of the Jorgensen Forge property and southwestern corner of the Boeing Plant 2 property extending landward of the sheetpile wall installed on the property of Jorgensen Forge (and that remains in place, demarcating the top of the shoreline bank). Sampling and analysis in this area conducted subsequent to the 2010 removal action identified the location of the CMP and PCBs in sufficient detail to design, plan, and perform the removal action proposed by this Amendment. The existing barrier wing wall will function to separate the cleanup area from the shoreline bank area to the south on the Jorgensen Forge property. At a later date, modification to the sheetpile or removal of the sheetpile may be necessary as a separate action for the Site.

The removal action will be carried out using unbraced sheet pile shoring and soil excavation in the wet. Perimeter sheetpiles will be driven up to the face of the Boeing 2-66 wall with an optional bench cut on the Jorgensen Forge property, and with a temporary 6 to 7-foot cut required on the Boeing property for safety of the 2-66 building wall. Water will be added to the area within the sheetpile enclosure to avoid

the need for bracing when excavating below a 12 ft. below ground surface ("bgs") elevation. Soil target elevations that will be later defined, will be excavated in the wet. Consistent with requirements that have been applied to the various LDW dredging projects, the respondents will need to dewater the excavated soils to the extent practicable before adding stabilizing agents. Excavation spoils will be staged and stabilized for off-Site disposal. Confirmation samples will be required at the base of the excavation following removal. Flocculation will be required for expedited settlement of suspended particulates within the sheetpile enclosure. Water within the sheetpile enclosure that is displaced by backfilling will be treated prior to discharge. All excavated spoils will be removed above an elevation of 30 ft. below ground surface (bgs). Limitations in construction and excavation may result in a "fluff" layer remaining at the base of the excavation. Confirmational sampling for PCBs will be necessary for this "fluff" layer. If sampling reveals that the cleanup level established in this Amendment are not being met, further excavation and post-excavation sampling will be required.

The proposed removal action will, to the extent practicable, contribute to the efficient performance of long-term remedial action for the LDW. If such additional action is required, this removal action will not impede future responses based on available information. Construction and greener cleanup BMPs will be addressed during design. Long-term maintenance and monitoring will be necessary to ensure applicable or relevant and appropriate requirements ("ARARs") are being met, and will be addressed during workplan development. It is expected that the workplan for the excavation and performance monitoring will be developed by the PRPs with EPA approval.

2. Applicable or relevant and appropriate requirements (ARARs)

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) requires that removal actions attain ARARs under federal or more stringent state environment or facility siting laws, to the extent practicable considering the exigencies of the situation. (40 C.F.R. § 300.415[j]). In determining whether compliance with ARARs is practicable, EPA may consider the scope of the removal action and the urgency of the situation. (40 C.F.R. § 300.415[j]).

Toxic Substances Control Act (TSCA) Regulations [40 C.F.R. Part 761]. These regulations are applicable to soils and other materials contaminated by PCBs, as well as to solids in a storm drain system and stormwater that contain PCBs. All such media and materials with PCBs at a concentration equal to or greater than 50 ppm must be incinerated in an approved incinerator or disposed of in a State or federally authorized hazardous or dangerous waste landfill, and those media with PCBs at a concentration less than 50 ppm may be disposed in a municipal solid waste or non-hazardous waste landfill, among other options. Aqueous liquids, such as stormwater, that contain PCBs may either be incinerated or decontaminated. These regulations also allow a PCB cleanup level for soil of 1 ppm without further conditions, such as capping and engineering or institutional controls, in certain situations and areas. Further, these regulations are applicable to the discharge of water to the LDW, and prohibit such a discharge unless the concentration of PCBs is less than 3 ug/L [40 C.F.R. § 761.50(a)(3)].

Washington State Water Quality Standards for Surface Waters [Chapter 173-201A WAC]. These regulations provide standards for the protection of surface water quality. These water quality criteria are anticipated to be of importance to any discharge of water to the LDW. Due to the complexity of the estuarine environment and the goal of protecting the full array of species that are present, it is anticipated that the lower of the marine and freshwater criteria will be applied to the removal action.

Ambient Water Quality Criteria as per the Clean Water Act [33 U.S.C. § 1314]; and the National Toxics Rule [40 C.F.R. §§ 131.36(b)(1) and (d)(4)]. These regulations and guidance standards provide criteria that are pertinent to acceptable surface water concentrations of PCBs.

Washington State Sediment Management Standards [Chapter 173-204 WAC]. These regulations set chemical concentration and biological effects standards for Puget Sound sediments which are applicable to the sediments in the LDW. A goal for the discharge of water to the LDW will be to not cause or contribute to the exceedances of the applicable State sediment management standards pertaining to PCBs.

Washington State Hazardous Waste Management Act and Dangerous Waste Regulations [RCW 70.105D; Chapter 173-303 WAC]. These regulations govern the handling and disposition of dangerous waste, including identification, accumulation, storage, transport, treatment, and disposal. They are potentially applicable to generating, handling, and managing dangerous waste at the Site, and would be potentially relevant and appropriate even if dangerous wastes are not managed during remediation.

Washington State Model Toxics Control Act Regulation and Statute [RCW 70.105D; Chapter 173-340 WAC]. These laws pertain to the cleanup and disposal of PCBs and other hazardous substances. While these laws allow a PCB cleanup level of 10 ppm for soil with the use of a cap in industrial areas, to achieve unlimited use of an area without additional conditions, these laws require a PCB cleanup level for soil of 1 ppm.

Washington State Solid Waste Management Act and Solid Waste Handling Standards [RCW 70.95; Chapter 173-350 WAC]. These regulations apply to facilities and activities that manage solid waste, as well as to the disposal of non-hazardous waste generated during removal activities. The regulations set minimum functional performance standards for proper handling and disposal of solid waste; describe responsibilities of various entities; and stipulate requirements for solid waste handling facility location, design, construction, operation, and closure. These regulations are also potentially applicable or relevant and appropriate for management of excavated soil or debris that will be generated during the Site cleanup. The off-site rule of CERCLA [42 U.S.C. § 9621(d)(3)] and the NCP [40 C.F.R. § 302.440] requires that solid and hazardous waste landfills located off-site to which hazardous substances are being sent must be acceptable to EPA. The project specifications will require EPA approval of the proposed disposal facility for any material sent off-site.

Washington Clean Air Act and Implementing Regulations [Chapter 173-400-040(8) WAC]. This regulation is potentially relevant and appropriate to response actions at the Site. It requires the owner or operator of a source of fugitive dust to take reasonable precautions to prevent fugitive dust from becoming airborne and to maintain and operate the source to minimize emissions.

General Regulations for Air Pollution Sources - Washington State [RCW 70.94; Chapter 173-400 WAC]. These regulations establish standards and rules applicable to the control and/or prevention of the emission of air contaminants. Depending on the response action selected, these regulations are potentially applicable to the Site (e.g., generation of fugitive dust during soil excavation).

Soils will be segregated based on the concentration of PCBs, and disposed of according to the requirements of TSCA. Soils 0-7 ft. bgs are assumed above the level of 1 ppm PCBs. Soils above 7ft bgs are assumed > 50 ppm and will need to be disposed of as subtidal C classified waste.

4. Project Schedule

This removal action is expected to start July 2015, and to require 6-8 weeks to complete.

B. Estimated Costs

The proposed removal action is expected to be conducted by Boeing and Jorgenson Forge, with oversight provided by EPA. The estimated cost for the proposed removal action is $1.7 to $1.9 million, and EPA's oversight costs are estimated to be less than $100,000.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the proposed removal action should be delayed or not taken, hazardous substances will remain as potential human health and ecological threats on-Site, as well as a continuing source of contaminants to the LDW.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

Refer to attached amended enforcement addendum.

IX. RECOMMENDATION

This decision document represents the recommended removal action for the Jorgenson Forge Outfall Site, Lower Duwamish Waterway Superfund Site, Tukwila, King County, Washington, that has been developed in accordance with CERCLA as amended, and is consistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site continue to meet the NCP criteria, 40 C.F.R. § 300.415(b), for a removal action and I recommend your approval of the proposed removal action. The proposed removal action is expected to be conducted by Boeing and Jorgenson Forge, with oversight provided by EPA. However, if these PRPs are unwilling or unable to conduct the proposed removal action, and EPA must do so, the total project ceiling is estimated to be $1.7 to $1.9 million.

X. APPROVAL/DISAPPROVAL

✓ Approval

Chris D. Field, Program Manager
Emergency Management Program

3/17/15
Date

____ Disapproval

Chris D. Field, Program Manager
Emergency Management Program

Date